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ABSTRACT

Research regarding the use of aversive conditioning is reviewed, ethical questions are considered, and the proper use of the procedure with the severly handicapped is examined. Cited are studies on the use of shock therapy, mild aversive, timeout procedures, overcorrection, and restraint. The importance of pairing positive with aversive stimuli is stressed. Special educators are urged to consider punishment as a last resort, secure parental and child permission if possible, and evaluate the potential harm of the behavior as opposed to the aversive stimuli. (CL)

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Aversive Conditioning and the Severely/Profoundly Handicapped

Norris G. Haring

Introduction

This morning I want to talk about a subject that has been very controversial in our profession -- aversive conditioning.

The word "punishment" conjures up images of shocking helpless mentally retarded children strapped to their beds, or throwing mental patients into darkened rooms where they remain, forgotten by their nurses. Punishment is something which was done a long time ago before we learned other, more positive ways of dealing with unwanted behaviors.

But a mother shouting "No!" to her child about to step off the curb into busy traffic is using an aversive stimulus. And the teacher who keeps Johnny after school because he threw erasers is "punishing" him. The therapist who paints the hands of a chronic "mouther" with a harmless but bad-tasting solution to keep her from self-stimulating is employing aversive conditioning.

The shock stick and the shouted "No!" are both aversive stimuli. How can one term cover such disparate behaviors? If using electric shock is undesirable but a harsh command is not only acceptable but possibly life-saving, where along this continuum does the use of a hand-painting substance fall? If parents and regular classroom teachers frequently use mild aversives in teaching children, why is their use by therapists and special educators so condemned?

Let's take an objective look at aversive conditioning. How is it defined? And does it have a legitimate place in the educational bag of tricks used to teach exceptional children?

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Many special educators and researchers have found that behavior modification is the most effective technique for teaching children who cannot learn by ordinary classroom methods. Often such children need special incentives to perform.

To educators, behavior modification almost always means positive reinforcement. Educators employ techniques which reward desirable behaviors, and thus strengthen those behaviors. Usually the hardest part of a positive reinforcement program is finding the most effective reinforcer for the individual pupil. Negative reinforcement is sometimes used to increase a behavior. In order to avoid a "bad" or punishing consequence, the subject emits the behavior. Nagging is one example of this form of behavior modification. In order to escape nagging, Junior cleans up his room. Both positive and negative reinforcement, then, work to <u>increase</u> a desired behavior. Punishment, or aversive stimulus, on the other hand, <u>decreases</u> a behavior. Thus, nagging could also be punishing if the behavior in question stopped. If Junior decided that he was not going to clean up his room because Mother nagged him about it, then that nagging is functioning as an aversive stimulus -- it decreases the room-cleaning behavior.

Mom would be chagrined to discover that her stimulus decreased the very behavior she sought to increase. But educators often wish to decrease some behaviors, like tantrumming or self-stimulating, while increasing desirable behaviors such as toileting or learning to count by ones to twenty. For most situations, systematically reinforcing positive behaviors and ignoring unwanted behaviors is sufficient to help children learn.

The severely/profoundly handicapped. Legislation within the last few years has forced open the doors of the schoolroom to many more handicapped children, among them severely and profoundly and multi-handicapped individuals. These children require special special education and special techniques to help them learn life skills and academic and vocational skills. Often, such severely involved children have disturbing behaviors which interfere with learning. An autistic child who rocks continuously or a severely retarded adolescent who slaps herself thirty times a minute will not be teachable until these interfering, self-stimulating behaviors are stopped.

Positive reinforcement of alternative behaviors which are incompatible with the self-stimulation is the first choice of special educators to decrease undesirable behaviors. Sometimes, though, a profoundly handicapped child will have such a small range of behaviors of any sort that finding a positive one to reinforce is difficult, especially if the undesirable behavior is already well established and highly reinforcing to the child. Ignoring a behavior based on attention-getting will also weaken and eventually eliminate it. How practical is it, however, to allow a head banger to hit his head against a sharp object while you wait for that behavior to extinguish? Some behaviors are just too dangerous to the child or to others to permit you to employ extinction procedures.

Remember, we want this undesirable behavior to decrease. Aversive conditioning decreases a behavior. If educators cannot reinforce positive behaviors and cannot risk the time required to extinguish an unwanted behavior, mild aversive input might alter a situation inhibiting learning.

The first question we must ask ourselves about aversives is "Do they work?" Then, "What are the ethical considerations and safeguards that must be involved in using aversive conditioning?" The third question is "What is the correct use of punishment with handicapped children?"

Review of the Literature

Before the 1960's, few studies employing aversive conditioning appeared in the literature on special education. Solomon (1964) concluded that punishment as a teaching tactic was beset with unscientific myths that kept educators from utilizing it despite evidence that punishment was an effective, long-lasting technique with few or no side effects. Gardner (1969) agreed with Solomon and accused educators of rejecting punishment not on the basis of scientific fact, but on philosophic, ethical, and sociopolitical grounds.

The idea of using shock with children was and still is repellent to many people. Perhaps part of the reaction against punishment with human subjects stemmed from the use of electric shock with mentally ill human patients and non-human subjects. Early aversive conditioning research with infra-human subjects was inconclusive; sometimes animals reacted quite differently than the experimenters expected them to do. Since punishment did not always work in these laboratory studies, or had undesirable side effects, many researchers questioned the validity of applying aversive stimuli to human subjects. Hesitancy to apply aversive stimulation was greater, too, because it was hardly ever necessary with the normal or mildly-to-moderately handicapped; positive reinforcement to modify behavior always worked.

As I mentioned earlier, however, special education is now serving children with more severe handicaps than were seen in classrooms two decades ago, or even ten years ago. This population of severely and profoundly handicapped children and young adults does not respond as readily to accepted methods of behavior modification. A way has to be found to curb undesirable behaviors like self-mutilation and aggression so that teachers can begin the process of educating the severely handicapped.

Shock therapy. The most publicized instances of aversive conditioning with exceptional children are, of course, the cases which used electric shock to end dangerous or interfering behaviors. By means of a shock stick, shock belt, or even a shock grid on the floor, experimenters have stopped a number of children from injuring themselves or others, or from engaging in behaviors which interfere with learning. Ivar Lovaas and his colleagues (Lovaas & Simmons, 1969; Butcher & Lovaas, 1968), Todd Risley (1968), and others have shown that electric shock not only works to end these undesirable behaviors, but that the effects can be permanent, and undesirable side effects are usually nil. In fact, once an unwanted behavior has been terminated, most children move more rapidly toward socialization and learning. Logan Wright (1973) applied electric shock to a retarded, hyperactive boy who self-induced seizures by passing his hand between his face and a light source and by blinking. Within two days of aversive conditioning, the boy never again induced seizures by waving his hand. Eye blinking inducements decreased by 90%. Not only were there no negative side effects to this experiment, but the boy's interpersonal contacts and general attentiveness to his environment markedly improved.

Mild aversives. In some cases for some children, electric shock does work. However, in some other cases it has proved ineffective in stopping unproductive self-stimulation or mutilation. Jones, Simmons & Frankel (1974) tried electric shock on one subject, which decreased the undesirable behavior, but produced a rash of new, equally destructive ones to take its place. They then used a mild aversive, time-out, which proved successful in permanently ending the behavior.

Because many parents object to shock therapy, as do many therapists, and because shock is often not feasible in terms of money, staff training time, or experimental setting, more therapists are looking at alternative forms of aversive conditioning. I would like to discuss some of these other forms of mild aversives, which have proved successful in controlling such undesirable behaviors as life-threatening self-mutilation and rumination, and aggression towards others, which could not be terminated by positive reinforcement.

I am sure that most of you are familiar with Ivar Lovaas' story of how he began to consider aversive stimulus as an effective means of dealing with self-destructive behaviors. When he first began working with autistic children, one young girl he was working with banged her head against the sharp edge of a metal filing cabinet if she was not restrained. One day, after he had worked with the girl for so long that she seemed less like a patient and more like one of his own children, Lovaas reacted against her head-banging. He yelled "Stop that!" and whacked her on the rump with the flat of his hand. She stopped head-banging. By the time she recovered from her surprise at being spanked and commenced head-banging again, Lovaas had decided to continue the spanking until she permanently stopped the behavior. He applied the

contingency again, and within a few sessions the head-banging ended for good (Chance, 1974).

Of course, there are problems with using such tactics to control behavior. In order to stop a behavior like head-banging, a "policeman" must always be present to provide the aversive conditioning. On the other hand, if the head-banging is done to attract the attention of another person, then the behavior would only appear when the possible reinforcer was nearby. If the educator or therapist is going to be in the presence of the head-banging behavior at any rate he might as well be a change agent in decreasing the behavior. Aversive conditioning would take no more therapist time than any other form of behavior modification and might terminate the behavior which positive reinforcement of alternative behaviors, or extinction, cannot end.

Since most parents yell "Stop that!" Lovaas' form of mild aversive cannot be considered unusual punishment. Most importantly, it works. As Macmillan et al. (1973) have pointed out, mild punishment is one of the most common behavioral tactics used by parents and teachers; the question should no longer be whether to use aversives or not, but how to use mild punishment systematically so that the child as well as the adult benefits from it.

Time-out. Time-out is probably the most commonly used form of aversive conditioning, especially in classroom situations. Time-out removes a child from the possibility of positive reinforcement. An unruly fifth grader is made to sit in the hall, depriving him of the possibility of peer or teacher reinforcement or reinforcing activities. An autistic child who engages in self-stimulatory finger flicking is timed out by the therapist who holds the child's hands still and looks

away from him for one minute. If the behavior decreases, then the procedure has worked -- and has involved use of a mild aversive.

Eaton and Lovitt (1969) used a time-out room to decrease a young boy's severe temper tantrums, which disturbed the rest of the students in his special education class and often led to classroom damage. Each time the boy was disruptive or destructive or yelled, the program advisor escorted him to a time-out room, where he remained for two to three minutes. Within three days the behaviors had stopped, returning only once on the ninth day when a substitute teacher had the class. A trip to the time-out room again ended the tantrumming. Additionally, other undesirable behaviors in this boy's repertoire were decreased. Hitting, disobedience, out-of-seat, and talk-outs, though not consequated, showed a significant decline.

Whitehurst & Miller (1973) presented a case study demonstrating that disruptive school bus behaviors by two preschool boys could be controlled by having the driver pass by their house the first time around and deliver them home only after all the other children had been deposited. The time-out procedure worked, and proved to be both inexpensive and practical in solving a problem bus drivers may often encounter.

Drabman & Spitalnik (1973) employed contingent social isolation of the disruptive behaviors of emotionally disturbed children in special classes. Ten minutes of isolating the offender in a small, sound-proof room soon brought classroom disruptions to less than a third of their baseline rate. After aversive conditioning was terminated, classroom behaviors still remained at less than half of what they were before intervention. Intermittent time-out proved effective in reducing

disruptive behavior by a retarded child in another preschool classroom (Clark, Rowbury, Baer, & Baer, 1973). The experimenters found that they did not have to keep the child on a fixed ratio to end her attacks on other people; intermittent application of mild aversives proved equally effective.

Self-destructive behavior has sometimes been extinguished by electric shock; however, as mentioned earlier, shock sometimes brings out worse behaviors to replace those it ended. Noncontingent social isolation can also successfully eliminate such undesirable behaviors when shock fails. Jones, Simmons, & Frankel (1974) employed time-out after shock was unsuccessful in eliminating a severely retarded girl's autistic-like self-mutilation. Electric shock ended the behavior in question, but other, more destructive behaviors surfaced to take its place. The behavior appeared to be reinforced by attention, so the therapists placed the girl in a room by herself for two hours with some activities on a table. Left to herself, with no one around to reinforce her for hitting and gouging, the girl began to play with some of the toys. By the seventh week, all the girl's lesions were healing, and she was taken out of the isolation room. Informal records on the ward showed that the behaviors did not recur and that the child spontaneously began socializing with other people and participating in ward activities.

Of course, these are but a handful of the recent studies in which teachers and ward personnel have been able to decrease undesirable behaviors by timing out the child. The procedure does have a high success rate and is inexpensive to administer. Special training is not needed, and any aide as well as the teacher can administer the aversive stimulus. Of course, if the behavior is not being reinforced by social

consequences, then time-out will not be aversive. An autistic child who self-stimulates by rocking will probably not be adversely affected by being placed in a room by himself, because the attention of others is not what reinforces his rocking behavior.

Overcorrection. With more severely involved children therapists may need to use other behavior modification tactics than positive reinforcement, extinction, or even time out. Foxx & Azrin (1973) and Azrin & Wesolowski (1974) used overcorrection to decrease unwanted behaviors in retarded and autistic subjects. On a ward for mentally retarded adults, theft by patients was a major problem until the experimenters used an overcorrection procedure; the thief not only had to return the stolen item, but had to give his victim an additional item of equal value. This proved punishing for the people doing the stealing and the incidents of theft decreased to zero within four days.

Self-stimulatory behaviors in autistic children often interfere with teaching them more appropriate behaviors. To decrease such undesirable activities, some children were trained via overcorrection in an appropriate mode of the behavior. Thus, a child who engaged in high-frequency hand-clapping was taught Functional Movement Training exercises. When he began clapping, a teacher requested him to begin moving his arms in functional movements, e.g., over his head, by his sides, etc. He eventually learned to move his arms in more productive ways. After therapists had extinguished the behavior in the school setting, the boy's parents reported that he was clapping almost 90% of the time at home. After one day of Functional Movement Training by parents in the home, the boy stopped his home clapping as well. In this same study (Foxx & Azrin, 1973), two retarded children who mouthed objects were

overcorrected by having their teeth brushed with an antiseptic mouth-wash. This eliminated the behavior completely. Slapping the child on the thigh and shouting "No!" and painting the hand with a bitter substance proved less effective in controlling mouthing behavior. In this study, all instances of overcorrection worked within a matter of days, were apparently not harmful to the children, and promoted outer-direction of the children rather than their former inner direction.

One especially interesting feature of overcorrection is that it makes the aversive stimuli fit the behavior. If a child claps, then overcorrection is used to train him in more productive ways to use his hands. There are other instances of mild aversives which are designed to directly influence the particular undesirable behavior.

The aversive fits the behavior. A physically handicapped, emotionally disturbed, retarded boy living at home wet his bed at least once a night, and sometimes more often. The mother, acting as therapist, used a mild aversive to stop his enuresis. A commercial urine-sensing device (Sears-Roebuck's "Wee-Alert") alerted the mother when the child wet his bed. She would immediately enter the child's room and lead him to a bath filled with cold water. When the boy was thoroughly wet, the mother then removed and dried him and put him into a clean bed. After less than a month the behavior was eliminated altogether. A cold bath had stopped enuresis relatively quickly, with no apparent harm to the child, and at the cost only of the mother's sound sleep for a few nights. And it was about as natural a contingency as you can arrange. (Tough, Hawkins, McArthur & Ravenswaay, 197:)

Restraint. Koegel and his associates (1974) held those body parts used by two autistic children to self-stimulate. They not only decreased

the self-stimulatory behavior by approximately 70%, but increased the amount of time spent playing with toys by about the same percentage. They suggest that reducing self-stimulatory, non-productive behaviors in such children by a mild aversive like hand-holding can produce spontaneous appropriate behavior at an increased level.

Other mild aversives. Rumination can become life-threatening when the child's rate of this behavior prevents him from keeping any nourishment in his stomach. Aversive conditioning has proved quite effective in overcoming this problem. In some cases, electric shock has stopped rumination, but the idea of shocking a weakened child to make him keep his food down seems incongruous as well as cruel. Sajwaj, Libet & Agras (1974) refused to use electric shock on a severely malnourished infant who ruminated. Instead, they used lemon juice as a mild aversive. Every time the infant began ruminating, they squirted a little lemon juice into her mouth. The aversive reduced the rumination by 90% during the first experimental phase. The second experimental phase completely terminated the behavior. Not only did the child start to gain weight, but developmental delays formerly noted all but disappeared and the infant engaged in more social behaviors.

Shock may work, but why use it if mildly aversive consequences can work equally well to decrease behaviors resistant to positive reinforcement? And often these consequences are readily at hand, cost little or nothing, and require only consistency in administration by teachers, ward personnel, parents, or other therapists.

You and I might not be reinforced by having a gummed star pasted to our arms, but some children will work patiently on long tasks for such a reward. A therapist assumes that the gummed star was reinforcing if it

works, if it increases the desired behavior. Mild aversives work similarly to decrease behaviors. Tickling may not strike you as "punishment," but the blind retarded girl who banged her head with her hands thought it was. Greene & Hoats (1971) taught ward personnel to approach the girl when she engaged in self-destructive behavior and tickle her firmly and deliberately under the arms. To stop the tickling, the girl lowered her arms. Not only did tickling drastically reduce the number of head-banging events, it required no special apparatus and took little staff training time.

Establishing response costs is a favorite tactic of parents. "If you don't finish your homework you can't watch television." Teachers of special education also find response costs effective in controlling disruptive behaviors when a positively reinforcing token system fails. Hall et al. (1971) found that taking back slips of paper from an emotionally disturbed boy when he whined and complained about reading and arithmetic assignments reduced those behaviors to near zero. The same researchers found that giving disturbed boys black marks for each time they were out of seat decreased that behavior. Each mark meant an extra five minutes of staying after school, which was punishing to the pupils. Alan Kazdin (1973) took away tokens which were exchangeable for food and toy reinforcers in a ward for the mentally retarded. In order to decrease the amount of disfluent speech emitted by the patients during stories told to Thematic Apperception Test Cards, the therapists took away tokens. This proved more effective in reducing speech disfluencies than contingent presentation of a loud noise, informative feedback, and no feedback.

Eaton & Lovitt (1969) took away chips which were exchangeable for free time when an emotionally disturbed pupil in a special education class rocked in his seat. Not only did chair rocking decline significantly, his vociferations also dropped, though not consequated. Additional unwanted behaviors such as hitting, talk-outs, and errors, also showed slight decreases. In the same study, the experimenters sought to decrease a girl's talking-out-of-turn behavior. They taped a piece of graph paper to her desk and filled in one square with a black mark each time she talked without raising her hand. However, if she raised her hand appropriately, the girl received a check mark in a square. She was told that ten check marks more than black marks would mean that she got to spend ten minutes during free time talking to the teacher, which was highly reinforcing. Instead, the girl came to consider the tally sheet itself aversive, often trying to cover it up when anyone came near her desk. Consequently, her rate of talk-outs dropped to zero. Additionally, other behaviors, such as out-of-seat, decreased, though not consequated.

Let me go back to one of my early examples for a moment. The mother who yells "Stop that!" to her child as he steps off the curb into a busy street has hopefully ended the running-into-street behavior by using a mild natural aversive. A simple "No" has proved successful in some instances in controlling dangerous, aggressive, and self-injurious behaviors. Hall et al. (1971) report a case study where a deaf-retarded girl was violently aggressive towards other children, herself, teachers, and even visitors to the classroom. The teacher initiated a mild aversive -- pointing her finger at the girl and shouting "No" -- and the behavior dropped from an average frequency of 71.8 per day to 5.4 per

day. Reversal proved that the mild aversive had indeed been the determining factor in stopping the girl's destructive behavior. When the condition was again instituted, the mean number of instances dropped to 3.1 per day. The teacher also reported that the girl was beginning to interact with other children, probably because they were not being punished for trying to interact with her by her behavior. Delmont Morrison (1972) discussed a study two students of his undertook with a mute, retarded girl in a ward setting. Positive reinforcement and extinction did not work to stop the girl's head banging. Finally, they decided to try punishment. They rejected shock because they did not feel they could administer it with good conscience. Instead the students tapped the girl on the head and said "No" in a firm voice. It worked. The girl's self-destructive behavior dropped from about 26 times during a thirty minute session to two responses. Not only was the "No" and the head tap effective where positive reinforcement and extinction had failed, it was painless to both subject and therapists and more in keeping with usual means of stopping any undesirable behavior in the home situation.

One thing that I need to make quite clear is the necessity of pairing positive with aversive conditioning. Though mild aversive may end an undesirable behavior after positive reinforcement fails to do so, nevertheless, it is also vitally important to show the child that <u>other</u> behaviors will be rewarded, not punished. Especially when the child is severely handicapped and may have a limited repertoire of skills, it is essential to pair a decrease in one behavior with an increase in another, productive one. If you stop a deaf/blind child from rocking by using a mild aversive, it is unethical and immoral in my opinion not to teach

that child some behavior that he or she can do that will accepted and rewarded. Many of the studies I have discussed earlier paired positive reinforcement of some accepted behavior with aversive conditioning of unwanted behaviors. This certainly muddies research findings on the effectiveness of punishment alone, but it is more beneficial to the child whose behavior is being shaped.

The Ethical Considerations Surrounding Aversive Conditioning

Aversive conditioning does work, with varying degrees of success. The recent research literature using human subjects does show that a variety of punishment forms, from electric shock to yelling "Stop that" can sometimes more effectively control dangerous behaviors or those which interfere with learning than can positive reinforcement or other forms of behavior modification. However, some people are afraid that aversives work too well, that they are so effective and their results so permanent that therapists will use punishment to the exclusion of other forms of behavior modification. In institutional settings particularly, there is fear that ward personnel, often too busy to give the children the amount of attention they need, will use aversives to control the disruptive child who demands too much of their time by exhibiting dangerous or undesirable behaviors.

Misuse of aversives. The fear of misuse bothers many educators. Misuse of classic types of positive reinforcement usually produces only a spoiled kid with decayed teeth. But misuse of punishment, some fear, can do psychological harm. We know from the literature that children quickly learn to differentiate between those therapists who punish them

and those who do not (Lovaas & Simmons, 1969; Bucher & Lovaas, 1968). When children learn to avoid the aversive experimenters all of the therapists must become punishers. Yet the same studies and others using a variety of aversive stimuli have shown that children often become more social after punishment has ended an undesirable behavior. Children who previously spent most of their time in unproductive rocking began playing with toys once the rocking was terminated. Once a retarded girl's violently aggressive behavior was brought under control through aversive therapy, she began to seek out and play with teachers and other children. Sometimes aversive stimuli help a child end inward-turning behaviors, and thus increase outward, social behaviors. However, punishment does not produce growth in and of itself. Punishment does not make positive behaviors appear in a child; it only decreases unproductive behaviors which may be so reinforcing to the child that teaching cannot take place.

Long-term aversive conditioning can have negative results. In their work with abused children, Kempe and Helfer (1972) learned that children who receive aversive stimuli rather than positive reinforcement often have limited social skills. They mistrusted people, especially adults, and were often withdrawn. Sometimes the pattern of aversive conditioning led to aggressive behaviors in the abused child, who eventually used the same sort of behavior modification on his own children. Of course, child abuse is an extreme but all too prevalent example of what can happen when aversive conditioning is the major form of response to children.

Child advocacy. Children, especially handicapped children, are most in need of advocates. They are less able to defend or speak for

themselves than most of our population. Special educators must exercise this advocacy function with special diligence, for they have it within their power to do a great deal of harm through misuse of the principles of behavior modification.

Senator Sam Erwin's Senate subcommittee conducted a study in 1974 on individual rights and the federal role in behavior modification. That a federal committee should think it worthwhile to look into the field of behavior modification to ensure that individual rights were not being violated by its practice indicates the concern of many persons in this country that behavior modifiers may be abusing their powerful techniques.

When the whole field of behavior modification is thus being scrutinized to ensure protection of individual rights, think what safeguards must be maintained to protect the rights of a self-injuring, severely retarded child against the misuse of aversive conditioning.

How can special educators guard against the misuse of aversive conditioning?

Punishment as a last resort. First, we must always seek the method for altering behavior which is least likely to cause harm to the child. Positive reinforcement is and should remain the most commonly used treatment, and aversive conditioning should be used only after all other treatment modes fail. We know from the research literature that punishment works to decrease unwanted behaviors such as self-mutiliation when other methods have proven unsatisfactory. But each case must be considered individually to determine if indeed punishment should be used to allow teaching to proceed.

Consideration of parents' and therapists' feelings about aversive stimuli. Next, permission of the parents and of the child if possible should always be a prerequisite to any treatment involving the use of aversive conditioning. Consent forms like the ones used at the Experimental Education Unit spell out the general rights of the family and the child and the limits placed on of the educators in applying behavior modification techniques. Specific parental consent is a necessity when punishment is being considered as a treatment mode. Parents should be involved in the decision-making process along with the therapist. If possible, a mild aversive should be chosen that the parents themselves consider within the bounds of good child management, such as a shouted "No!"

Sometimes therapists try out the aversive stimulus on themselves first. Before using electric shock on any patient, many researchers are required to first test out the strength of the shock on themselves. The ethics of the therapists themselves are an important part of the decision to use aversive stimuli. Often they have serious reservations against giving any discomfort to any child. Morrison (1972) relates how his two students agonized over the decision to use an aversive on a mute, retarded girl who banged her head against hard surfaces. When other forms of behavior modification failed, they had to look to punishment. Neither of them could use shock on the child, so a mild aversive, shouting "No" and light head tap was used, which effectively stopped the dangerous head banging.

The cure versus the problem. The last ethical consideration concerning when and if to use aversive conditioning is a question of degree. Which has more potential for harm to the child, the punishment, or the

behavior it seeks to end? Especially with severely and profoundly handicapped children, this must be an important consideration. Because this population exhibits more self-destructive, self-stimulatory, and aggressive behaviors, and because they are more resistant to positive reinforcement and extinction due to limited sensory and cognitive ability, these children are most likely to respond to aversive conditioning. Is it worse to keep a child strapped to his bed for years on end, in order to keep him from emitting a dangerous behavior, or to put him through a program of electric shock which ends the dangerous behavior with a few therapy sessions? Is it going to hurt an autistic child more to rock away her school years, or to have her body forcibly held when she rocks to decrease the behavior so that she will be more responsive to outside influences?

One additional caution about using aversives: set precise limits on what sort of behaviors you will consider using aversives to end. As I said earlier, each case should be examined individually to determine when, how, and where aversive conditioning should be used, and especially when it should be terminated.

Conclusion

Let me go back to my three original questions: First, does aversive conditioning work? The research appearing within the last ten or so years seems to indicate that a variety of punishments do work successfully on a variety of behaviors where positive reinforcement had failed. The second question, concerning the ethical considerations of punishment, is harder to answer. Parents and educators must work together to ensure that the most effective method is used to inhibit unwanted

behaviors, methods that will cause least harm to the child. The dilemma of which is worse, problem or cure, must be solved. When systematically applied in a controlled setting by competent therapists, punishment can be used ethically, but only if the data show that the desired effect is being achieved. If the most competent of researchers continues to use punishment when his data tell him aversion therapy is not working, then he is incorrectly using a powerful tool with the potential for damage. The proper use of punishment consists of systematic application by competent therapists who rely on their data to tell them if a program is appropriate in all respects -- that it does work and that it has no unacceptable level of side-effects.

Sometimes we let our professional objectivity be manipulated by long-standing myths and unchallenged opinions. Let's take another look at aversive conditioning, especially as it is being used to decrease destructive behaviors in our newest pupils, the severely and profoundly handicapped. I think it is important that we be open to hard scientific data on all sides of this provocative and important question. This annual convention is a forum for the exchange of information vital to our field. The following speakers will be presenting some data that I believe you will find stimulating.

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